

#### ABSTRACT

The present invention provides *inter alia* electroplating compositions, methods for use of the compositions and products formed by the compositions. Electroplating compositions of the invention are characterized in significant part by a grain refiner/stabilizer additive comprising one or more non-aromatic compounds having  $\pi$  electrons that can be delocalized, e.g., an  $\alpha,\beta$  unsaturated system or other conjugated system that contains a proximate electron-withdrawing group. Compositions of the invention provide enhanced grain refinement and increased stability in metal plating solutions, particularly in tin and tin alloy plating formulations.